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PP-331 [Apitherapy]

Royal jelly as a natural supplement for improving semen quality and blood parameters in breeding dogs

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Introduction

Royal jelly, a secretion from worker honeybees, is known for its antioxidant and reproductive benefits. While its effects on various species are studied, its role in canine fertility remains unclear. Enhancing semen quality is crucial for breeding success, and natural alternatives to synthetic supplements are gaining interest. This study aims to assess the impact of Royal jelly on semen quality and blood parameters in breeding dogs, providing insights into its potential as a natural reproductive health supplement.

Methods

Fig. 1. Study dog and supplements.

The study was conducted in a kennel with six German Dwarf Spitz dogs (2.5–3 years old), divided into two groups: a control group (n=3) receiving glucose tablets (100 mg/day) and an experimental group (n=3) receiving Royal jelly tablets (100 mg/day) for ten days.

Semen and blood samples were collected at three time points: before supplementation (T1), 10 days after supplementation (T2), and two months post-supplementation (T3).

Fig. 2. Semen collection, semen samples.

Fig. 3. Sperm motility testing program.

Semen was analyzed for volume, motility, concentration, and morphology, while blood samples were examined for biochemical and morphological parameters.

Results

Royal jelly supplementation significantly improved sperm subjective motility (MOT) and volume in the experimental group compared to the control group ($P<0.05$). The sperm motility in the Royal jelly group increased from 65.0% (SD=13.2) at T1 to 85.0% (SD=5.0) at T2 and remained elevated at T3 (86.7% (SD=2.9)). The control group did not show a statistically significant difference ($P>0.05$). Semen volume also increased in the Royal jelly group (T1: 1.6 (SD=0.06) mL; T2: 2.0 (SD=0.46) mL; T3: 2.0 (SD=0.44) mL), while the control group showed a decreasing trend (T1: 1.43 (SD=0.49) mL; T2: 1.27 (SD=0.20) mL; T3: 1.33 (SD=0.40) mL.

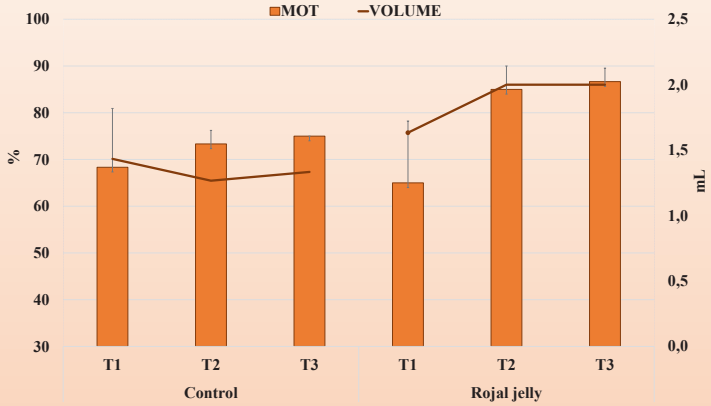

Fig. 4. Effect of Royal jelly on sperm motility and volume.

Blood morphology remained within the normal range across all time points in both groups, and blood biochemistry showed no significant differences but indicated improvements in some parameters. These findings suggest that Royal jelly supplementation can enhance semen quality without negatively affecting overall health.

Discussion and conclusion

The study highlights the potential of Royal jelly as a valuable supplement for improving fertility in breeding dogs, offering a new market opportunity for beekeepers. With increased awareness of natural reproductive enhancers, Royal jelly could gain broader recognition in veterinary applications, encouraging sustainable and profitable beekeeping practices.

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Royal jelly, a secretion from worker honeybees, is known for its antioxidant and reproductive benefits. While its effects on various species are studied, its role in canine fertility remains unclear. Enhancing semen quality is crucial for breeding success, and natural alternatives to synthetic supplements are gaining interest. This study aims to assess the impact of royal jelly on semen quality and blood parameters in breeding dogs, providing insights into its potential as a natural reproductive health supplement. The study was conducted in a kennel with six German Dwarf Spitz dogs (2.5–3 years old), divided into two groups: a control group (n=3) receiving glucose (100 mg/day) and an experimental group (n=3) receiving royal jelly (100 mg/day) for ten days. Semen and blood samples were collected at three time points: before supplementation (T1), 10 days after supplementation (T2), and two months post-supplementation (T3). Semen was analyzed for volume, motility, concentration, and morphology, while blood samples were examined for biochemical and morphological parameters. Royal jelly supplementation significantly improved sperm motility and volume in the experimental group compared to the control group ($p<0.05$). The sperm motility in the royal jelly group increased from 65.0% (SD=13.2) at T1 to 85.0% (SD=5.0) at T2 and remained elevated at T3 (86.7% (SD=2.9)). The control group did not show a statistically significant difference ($p>0.05$). Semen volume also increased in the royal jelly group (T1: 1.6 (SD=0.06) ml; T2: 2.0 (SD=0.46) ml; T3: 2.0 (SD=0.44) ml), while the control group showed a decreasing trend (T1: 1.43 (SD=0.49) ml; T2: 1.27 (SD=0.20) ml; T3: 1.33 (SD=0.40) ml). Blood morphology remained within the normal range across all time points in both groups, and blood biochemistry showed no significant differences but indicated improvements in some parameters. These findings suggest that royal jelly supplementation can enhance semen quality without negatively affecting overall health.

The study highlights the potential of royal jelly as a valuable supplement for improving fertility in breeding dogs, offering a new market opportunity for beekeepers. With increased awareness of natural reproductive enhancers, royal jelly could gain broader recognition in veterinary applications, encouraging sustainable and profitable beekeeping practices.